



Chemistry

Name: _____

Section _____ ACIDS AND BASES WS Date: _____

Directions (1-13): For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. Some questions may require the use of the 2011 Edition Reference Tables for Physical Setting/Chemistry.

- According to Arrhenius theory, acids form which ion in water?
 - acetate
 - hydrogen
 - chloride
 - sodium
 - As 1 g of sodium hydroxide dissolves in 100 g of water, the conductivity of the water
 - decreases
 - increases
 - remains the same
 - According to Arrhenius theory, citric acid in oranges and acetic acid in vinegar are classified as acids because their aqueous solutions contain
 - H⁺ ions
 - H₂ atoms
 - OH⁻ ions
 - OH⁻ atoms
 - Which of the following is an Arrhenius acid?
 - C₂H₅OH
 - CH₃COOH
 - KH
 - KOH
 - 1.0-molar solutions of which of the following would have the highest OH⁻ concentration?
 - H₂SO₄
 - NH₄Cl
 - KNO₃
 - NaOH
 - If 1 mol of each of the following substances were dissolved in 1 L of water, which solution would have the highest H₃O⁺ ion concentration?
 - CH₃COOH
 - NaCl
 - KBr
 - Ba(OH)₂
 - Which compound is an electrolyte?
 - C₆H₁₂O₆
 - C₁₂H₂₂O₁₁
 - C₂H₅OH
 - CH₃COOH
 - Which is the only negative ion present when an Arrhenius base is dissolved in water?
 - OH⁻
 - H₃O⁻
 - H⁻
 - O²⁻
 - When substance X is dissolved in water, the only positive ions in the solution are hydrogen ions. Substance X could be
 - NaOH
 - NaH
 - H₂S
 - NH₃
 - Which species is classified as an Arrhenius base?
 - CH₃OH
 - LiOH
 - PO₄³⁻
 - CO₃²⁻
 - A solution of a base differs from a solution of an acid in that the solution of base
 - is able to conduct electricity
 - is able to cause an indicator color change
 - has a greater [H₃O⁺]
 - has a greater [OH⁻]
 - An HCl solution is a stronger acid than a solution of HC₂H₃O₂ of the same concentration because
 - it has more hydrogen ions in solution
 - it has more hydroxide ions in solution
 - it has fewer hydrogen ions in solution
 - it has fewer hydroxide ions in solution
 - When an Arrhenius acid is dissolved in water, it produces
 - H⁺ as the only positive ions in solution
 - NH₄⁺ as the only positive ions in solution
 - OH⁻ as the only negative ions in solution
 - HCO₃⁻ as the only negative ions in solution
- 14 A student tests the conductivity of an unknown substance and determines it to be a good conductor of electricity. Based on this, he decides that it is an acid. Is there enough evidence to warrant this conclusion? What additional tests could be performed to confirm this conclusion? For each test, indicate the result that would verify the substance to be an acid.